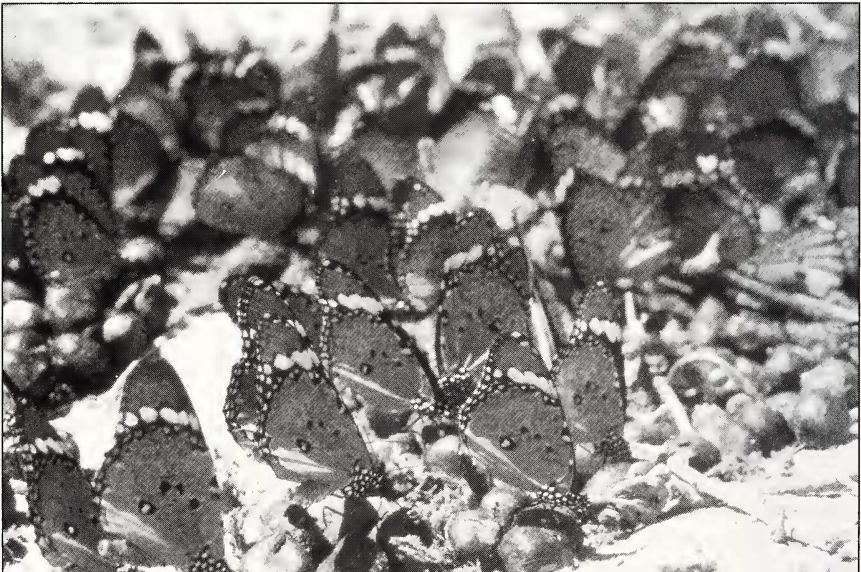


***Danaus chrysippus* (Lep.: Nymphalidae, Danainae) on the droppings of the gemsbok *Oryx gazella* in Gemsbok National Park, Botswana/South Africa**

I visited Gemsbok National Park in late February 1991. The park lies in both the extreme south-west of Botswana and in north-western South Africa. More details of the butterflies in the park can be found in Larsen (1992. The butterflies of the Gemsbok National Park in Botswana (Lepidoptera – Rhopalocera) *Botswana Notes and Records*, 24:181-204). *Danaus chrysippus* L. was fairly common, though not exactly numerous. I was therefore somewhat surprised to find an agglomeration of more than males on a pile of gemsbok *Oryx gazella gazella* droppings. All were males.

It is not unusual to find members of the Danainae on various foul substances such as carcasses or urine. They are also seen on excrement, though mainly on that of carnivores and monkeys. However, I have never previously seen such numbers or such density in one site. Cowpats and elephant dung are also visited, but only when fresh, and probably more for moisture rather than nutrients. Gemsbok droppings are always very dry – after all these animals often have to derive practically their entire water intake from forage and dew. And the droppings on which the butterflies were sitting were not fresh.

So the situation seemed very unusual. What was going on? The attractant could not be moisture, while salts or amino acids are also normally derived from moister substances. It was only the next morning, over breakfast in camp, that a possible



Danaus chrysippus aggregating on gemsbok droppings; about half the total assemblage is included in the photo.

cause struck me. The Danainae males need to ingest pyrrolizidine alkaloids to synthesize metabolically the sex pheromones necessary for successful courtship. These are not present in the larval host plants (Asclepiadaceae) so the first activity of a newly hatched male will be to find plants that contain the appropriate alkaloids; such plants are scattered over the plant kingdom, but even within a given genus, only some species are used. *Heliotropium* (Boraginaceae) and *Crotalaria* (Fabaceae) are common alkaloid sources, and dried parts or upturned roots are most attractive. The Danainae are quite willing to seek out pyrrolizidine compounds wherever they occur. They can be lured in numbers by hanging up baits of dried Heliotrope and in Bangladesh I saw at least seven different *Euploea* of several species coming to a dead *Tirumala agleoides*.

I immediately went off to gather a sample of the droppings for analysis, but it was six kilometres away in featureless sub-desert, and I could not find the exact spot again. The gemsbok that left its droppings might have been foraging on such pyrrolizidine-rich plants. The alkaloids were probably not absorbed by its digestive system and the dry dropping might even have had an unusually high pyrrolizidine content. The fact that all the *Danaus chrysippus* in the picture are quite fresh lends further support to this explanation.

However, there are also two counter-indications. First, pyrrolizidine alkaloids are known to be serious toxins that cause death in domestic grazers, though usually avoided (Mark Williams pers. comm.). Second, the gemsbok is essentially a grazer, and no grass is known to contain pyrrolizidine alkaloids. However, gemsbok stomach content has been found to contain up to 17% non-grass dry matter, so the possibility still remains. Should anyone ever be in my situation, please make sure that a sample of the droppings are collected for analysis.—TORBEN B. LARSEN, UNDP Vietnam, c/o Palais des Nations, 1211 Geneva 10, Switzerland (E-mail: torbenlarsen@netnam.vn).

***Chrysodeixis eriosoma* (Doubleday, 1843) (Lep. : Noctuidae) in Hampshire**

In October 2002 I was brought a larva which was found by Adrian Butterworth of Brockenhurst in a bunch of *Chrysanthemum* bought for his wife. The flowers had been purchased locally in the New Forest. When I received the larva, which was green and obviously a plusiid, it was preparing to pupate. This it did in an extensive, tough, greyish spinning on the underside of a leaf of the foodplant. It duly emerged on 1 November 2002 and proved to be a *Chrysodeixis* species. I had previously bred a short series of *Chrysodeixis chalcites* (Esper) and also have two wild caught specimens in my collection. I did not think this insect was *chalcites* and initially thought it might be *C. acuta* (Walker), which I only knew from the literature. When I showed the moth to Bernard Skinner he considered it was a dark *chalcites* and certainly not *acuta*.

During 2004, I had the pleasure of meeting Michael Fibiger, by chance, in Lappland and during our conversation he told me of a third species in the genus, *C. eriosoma*, which was turning up in Europe. I subsequently visited the Natural